DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

MAINTENANCE DREDGING
JACKSONVILLE HARBOR
DUVAL COUNTY, FLORIDA

FINDING OF NO SIGNIFICANT IMPACT

I have reviewed the Environmental Assessment (EA) of the proposed action. Based on information analyzed in the EA, reflecting pertinent information obtained from other agencies and special interest groups having jurisdiction by law and/or special expertise, I conclude that the proposed action will have no significant impact on the quality of the human environment. Reasons for this conclusion are, in summary:

1. There will be no adverse impacts to endangered or threatened species, if the work is conducted in accordance with the Regional Biological Opinion issued by the National Marine Fisheries Service for dredging within Jacksonville Harbor.

2. In coordination with the State Historic Preservation Officer, it was determined there would be no impacts on sites of cultural or historical significance.

3. State water quality standards will be met.

4. The proposed project has been determined to be consistent with the Florida Coastal Zone Management Program.

5. Measures to eliminate, reduce, or avoid potential impacts to fish and wildlife resources will be implemented during project construction.

6. The proposed project has been evaluated pursuant to the Migratory Bird Treaty Act. The Migratory Bird Protection Policy for the Jacksonville Harbor has been prepared and will be implemented for this project and for future projects. The Policy has been coordinated with the U.S. Fish and Wildlife Service and the State of Florida.

7. Benefits to the public will be maintenance of the navigation channel, continued local economic stimulus, and increased suitable migratory bird nesting habitat.

In consideration of the information summarized, I find that the proposed action will not significantly affect the human environment and does not require an Environmental Impact Statement.

23 Dec 96
Date

TERRY L. RICE
Colonel, Corps of Engineers
Commanding

DECEMBER 1996

MAINTENANCE DREDGING

JACKSONVILLE HARBOR
DUVAL COUNTY, FLORIDA

ENVIRONMENTAL ASSESSMENT

US Army Corps
of Engineers
Jacksonville District
South Atlantic Division

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1.0 PURPOSE OF AND NEED FOR ACTION.

1.1. Introduction. The proposed work consists of the maintenance dredging of Jacksonville Harbor which includes the excavation of shoaled bottom material from Cut 1 to the Terminal Channel (Figure 1.1). Since the initial construction, sand and sediments have periodically accumulated in the channel, reducing the navigable capacity of the project. Maintenance dredging and disposal have previously been conducted to maintain the channel. Dredging would be required to a depth of 40 feet which is the 38-foot project depth plus 2 feet of advanced maintenance dredging. Dredged material from the various cuts within the harbor could be placed in Bartram's Island, Buck Island, in the beach placement area and the JEA site (Figure 1.2 and 1.3) depending on the quality of the material and the economic need of the local sponsor. In order to meet the public need as authorized by Congress, the Federal standard must be maintained.

1.2. Authority. The maintenance of the Jacksonville Harbor was authorized by 27 October 1965, House Document 214, 89th Congress, 1st Session.

1.3. Decision to be made. Whether the channel needs to be maintained and where would it be economically feasible and environmentally suitable to place the material.

1.4. Relevant Issues. The following are the issues relevant to the decision:

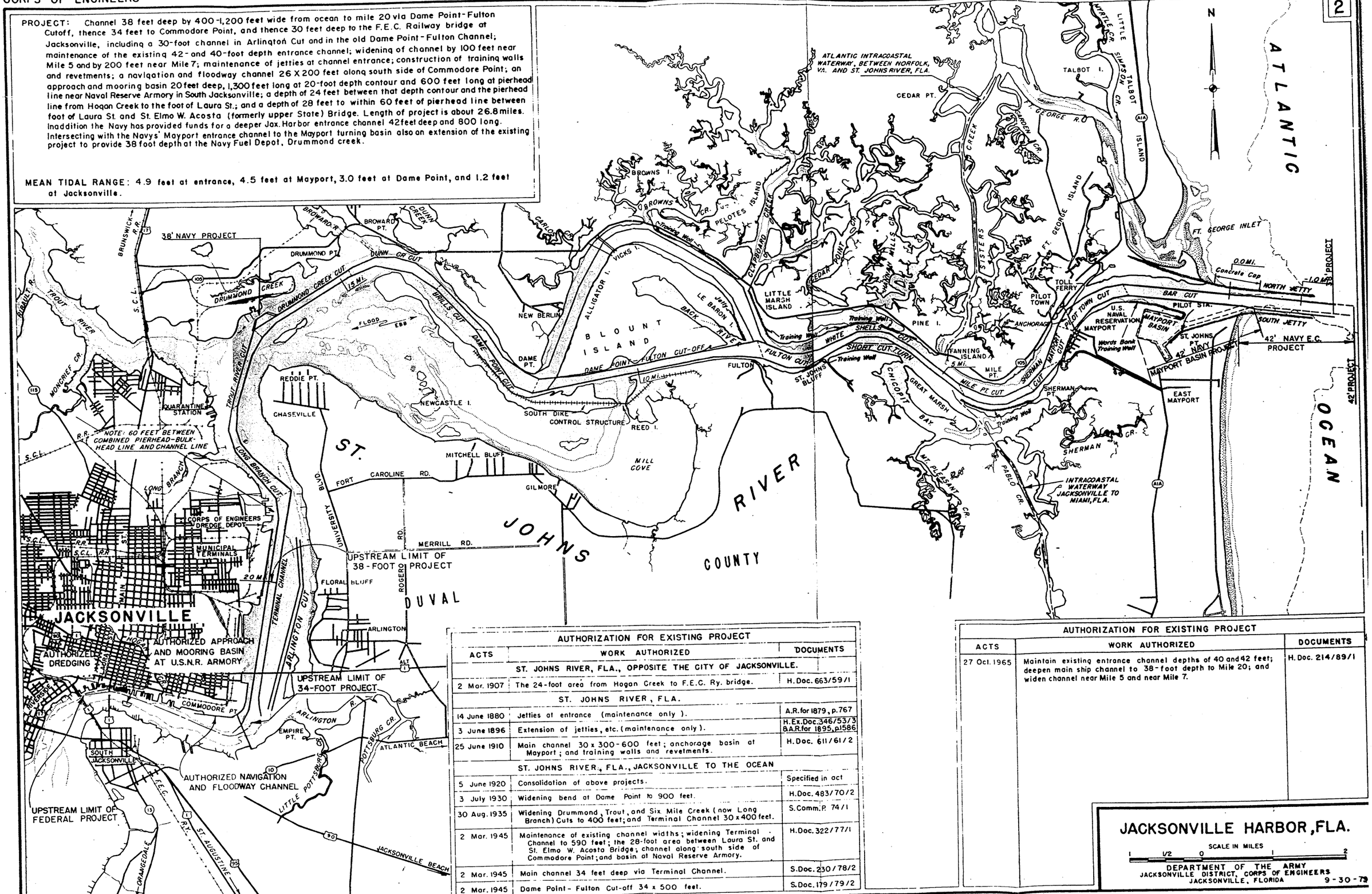
a. Water quality
b. Sea turtle impacts
c. Manatee impacts
d. Migratory bird nesting impacts
e. Cultural resources
f. Timucuan Ecological and Historic Preserve impacts
g. Aesthetics
h. Recreation
i. Navigation
j. Economics

1.5. Permits. All permits and licenses have been issued. This includes a State of Florida Water Quality Certificate.

1.6. Methodology. An interdisciplinary team used a systematic approach to analyze the affected area, to estimate the environmental effects, and to write the environmental assessment. This included literature searches, coordination with agencies and private groups having expertise in particular areas, and field investigations.

PROJECT: Channel 38 feet deep by 400-1,200 feet wide from ocean to mile 20 via Dame Point-Fulton Cutoff, thence 34 feet to Commodore Point, and thence 30 feet deep to the F.E.C. Railway bridge at Jacksonville, including a 30-foot channel in Arlington Cut and in the old Dame Point-Fulton Channel; maintenance of the existing 42- and 40-foot depth entrance channel; widening of channel by 100 feet near Mile 5 and by 200 feet near Mile 7; maintenance of jetties at channel entrance; construction of training walls and revetments; a navigation and floodway channel 26 X 200 feet along south side of Commodore Point; an approach and mooring basin 20 feet deep, 1,300 feet long at 20-foot depth contour and 600 feet long at pierhead line near Naval Reserve Armory in South Jacksonville; a depth of 24 feet between that depth contour and the pierhead line from Hogan Creek to the foot of Laura St.; and a depth of 28 feet to within 60 feet of pierhead line between foot of Laura St. and St. Elmo W. Acosta (formerly upper State) Bridge. Length of project is about 26.8 miles. Inaddition the Navy has provided funds for a deeper Jax. Harbor entrance channel 42 feet deep and 800 long. Intersecting with the Navys' Mayport entrance channel to the Mayport turning basin also an extension of the existing project to provide 38 foot depth at the Navy Fuel Depot, Drummond creek.

MEAN TIDAL RANGE: 4.9 feet at entrance, 4.5 feet at Mayport, 3.0 feet at Dame Point, and 1.2 feet at Jacksonville.



AUTHORIZATION FOR EXISTING PROJECT		
ACTS	WORK AUTHORIZED	DOCUMENTS
ST. JOHNS RIVER, FLA., OPPOSITE THE CITY OF JACKSONVILLE.		
2 Mar. 1907	The 24-foot area from Hogan Creek to F.E.C. Ry. bridge.	H.Doc. 663/59/1
ST. JOHNS RIVER, FLA.		
14 June 1880	Jetties at entrance (maintenance only).	A.R. for 1879, p. 767
3 June 1896	Extension of jetties, etc. (maintenance only).	H.Ex.Doc. 346/53/3 & A.R. for 1895, p. 1586
25 June 1910	Main channel 30 x 300-600 feet; anchorage basin at Mayport; and training walls and revetments.	H.Doc. 611/61/2
ST. JOHNS RIVER, FLA., JACKSONVILLE TO THE OCEAN		
5 June 1920	Consolidation of above projects.	Specified in act
3 July 1930	Widening bend at Dame Point to 900 feet.	H.Doc. 483/70/2
30 Aug. 1935	Widening Drummond, Trout, and Six Mile Creek (now Long Branch) Cuts to 400 feet; and Terminal Channel 30 x 400 feet.	S.Comm.P. 74/1
2 Mar. 1945	Maintenance of existing channel widths; widening Terminal Channel to 590 feet; the 28-foot area between Laura St. and St. Elmo W. Acosta Bridge; channel along south side of Commodore Point; and basin at Naval Reserve Armory.	H.Doc. 322/77/1
2 Mar. 1945	Main channel 34 feet deep via Terminal Channel.	S.Doc. 230/78/2
2 Mar. 1945	Dame Point-Fulton Cut-off 34 x 500 feet.	S.Doc. 179/79/2

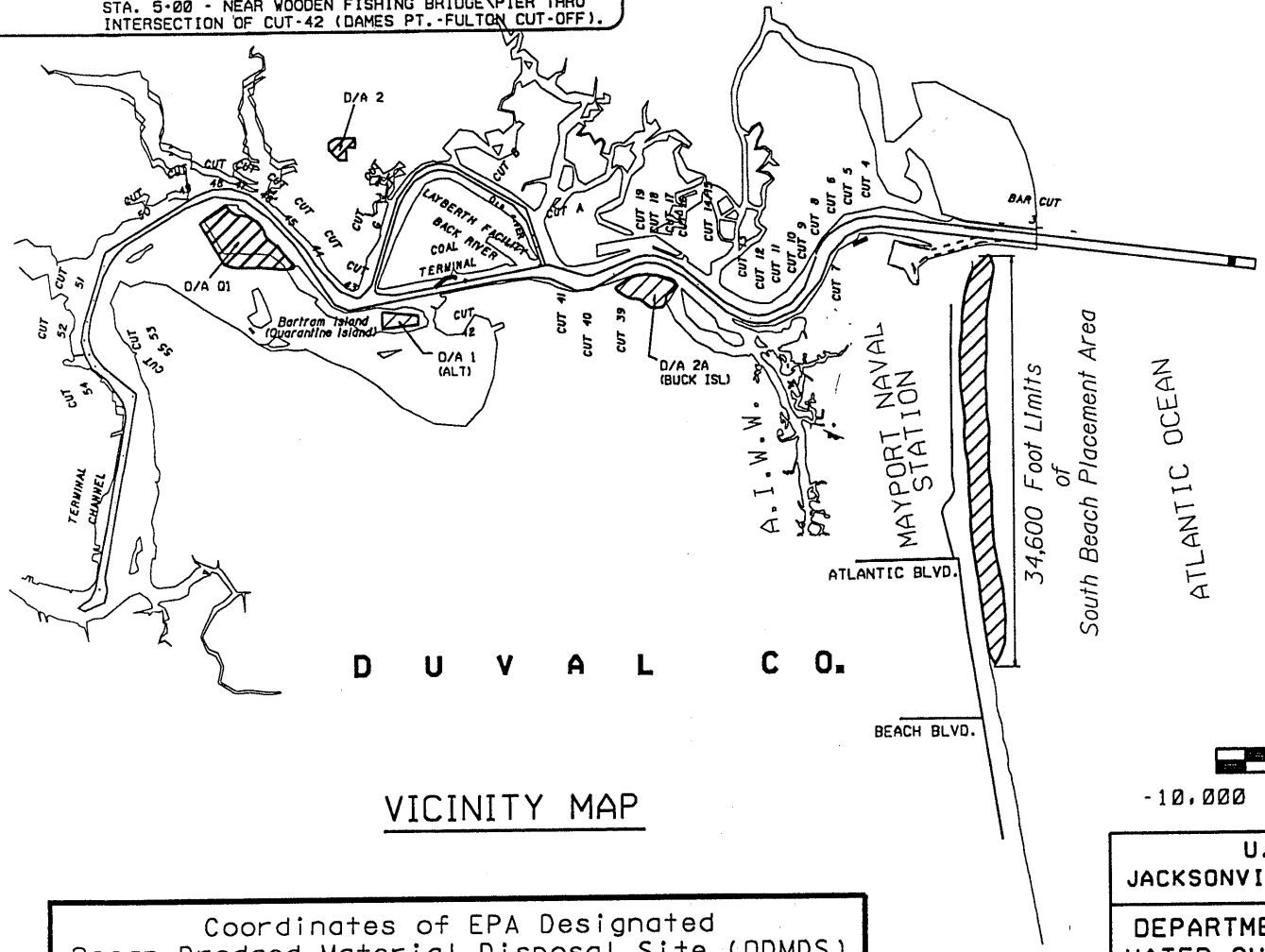
AUTHORIZATION FOR EXISTING PROJECT		
ACTS	WORK AUTHORIZED	DOCUMENTS
27 Oct. 1965	Maintain existing entrance channel depths of 40 and 42 feet; deepen main ship channel to 38-foot depth to Mile 20; and widen channel near Mile 5 and near Mile 7.	H.Doc. 214/89/1

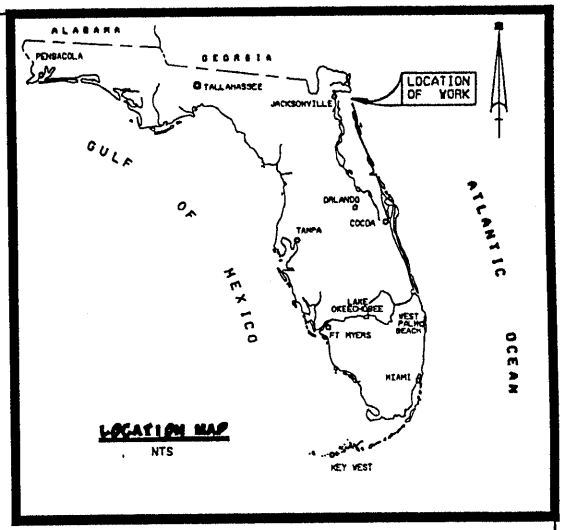
JACKSONVILLE HARBOR, FLA.

SCALE IN MILES 1 1/2 0 1 2

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA 9-30-75

AUTHORIZED PROJECT DEPTH	
42-FT	CUT-3 (BAR CUT), STA. 0+00 THRU STA. 210+00 (INTERSECTION MAYPORT NAVY ENTRANCE CHANNEL).
38-FT	CUT-3 (BAR CUT) STA. 210+00 THRU TERMINAL CHANNEL, STA. 64+56 - PORT AUTHORITY DOCKS.
34-FT	TERMINAL CHANNEL, STA. 64+56 THRU STA. 186+21 (APPROX. 1200 FEET UPSTREAM FROM THE HART BRIDGE NEAR COMMODORE POINT).
30-FT	TERMINAL CHANNEL, STA. 186+21 CONTINUING UPSTREAM TO FEC RAILWAY BRIDGE AT JACKSONVILLE.
30-FT	OLD RIVER BLOUNT ISLAND (WESTSIDE) CHANNEL CUT-F, STA. 5+00 - NEAR WOODEN FISHING BRIDGE\PIER THRU INTERSECTION OF CUT-42 (DAMES PT.-FULTON CUT-OFF).





VICINITY MAP

SCALE IN FEET

-10,000 0 10,000 20,000

N

Coordinates of EPA Designated Ocean Dredged Material Disposal Site (ODMDS)							
Latitude				Longitude			
Deg	Min	Sec		Deg	Min	Sec	
30	21	30	N	81	18	34	W
30	21	30	N	81	17	25	W
30	20	30	N	81	17	26	W
30	20	30	N	81	18	34	W

U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT, JACKSONVILLE, FLORIDA

DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER QUALITY CERTIFICATION APPLICATION
JACKSONVILLE HARBOR
MAINTENANCE DREDGING

LOCATION & VICINITY MAPS

DATE: DEC 95	DRAWING SET 2	SHEET 1 OF

Table 1
Jacksonville Harbor Dredging Parameters for Water Quality Certification

NOTE: Channel width does not include additional width as needed for turn wideners

REV: Dec 96

Channel Length							Project Dredging Depths (Ft.)			Minimum	Placement Option		
	Station		Section Length		Cumulative	Cumulative	Authorized	Advanced	Maximum	Width	Sand w/Silt or Clay		Silt or
Cut	From	To	(Ft.)	(Mi.)	Subtotal (Mi.)	(Mi.)	Depth	Maintenance	Depth	(Ft.)	<=10%	>10%	Clay
3	0 + 00.00	198 + 63.3	19,863	3.76	3.76	3.76	42	2	44	800	Beach or ODMDS	ODMDS	ODMDS
	## + 63.3	300 + 00.00	10,137	1.92	1.92	5.68	38	2	40	800	Beach	D/A 2A	
4	0 + 00.00	13 + 45.6	1,346	0.25	2.17	5.94	38	2	40	900			
5	0 + 00.00	13 + 58.2	1,358	0.26	2.43	6.19	38	2	40	950			
6	0 + 00.00	24 + 72.1	2,472	0.47	2.90	6.66	38	2	40	950			
7	0 + 00.00	28 + 21.8	2,822	0.53	3.43	7.20	38	2	40	1,150	Beach or D/A 2A		
8	0 + 00.00	24 + 56.4	2,456	0.47	3.90	7.66	38	2	40	550			
9	0 + 00.00	24 + 23.6	2,424	0.46	4.36	8.12	38	2	40	550			
10	0 + 00.00	7 + 77.4	777	0.15	4.51	8.27	38	2	40	550			
11	0 + 00.00	6 + 8.86	609	0.12	4.62	8.38	38	2	40	550			
12	0 + 00.00	4 + 96.2	496	0.09	4.72	8.48	38	2	40	550			
13	0 + 00.00	18 + 14.8	1,815	0.34	5.06	8.82	38	2	40	550			
14 - 15	0 + 00.00	47 + 52.3	4,752	0.90	5.96	9.72	38	2	40	500			
16	0 + 00.00	13 + 31.3	1,331	0.25	6.21	9.97	38	2	40	500			
17	0 + 00.00	10 + 92.1	1,092	0.21	6.42	10.18	38	2	40	500			
18	0 + 00.00	8 + 98.6	899	0.17	6.59	10.35	38	2	40	500			
19	0 + 00.00	9 + 27.1	927	0.18	6.76	10.53	38	2	40	500			
39	2 + 15.4	37 + 57.9	3,542	0.67	7.43	11.20	38	2	40	450			D/A Q1
40	0 + 00.00	19 + 94.6	1,995	0.38	7.81	11.57	38	2	40	1,200			
41	0 + 00.00	29 + 54.6	2,955	0.56	8.37	12.13	38	2	40	1,000			
42	0 + 00.00	159 + 16.2	15,916	3.01	11.39	15.15	38	3	41	500			
43	0 + 00.00	21 + 57.00	2,157	0.41	11.80	15.56	38	2	40	1,200			
44	0 + 00.00	49 + 31.8	4,932	0.93	12.73	16.49	38	2	40	550			
45	0 + 00.00	40 + 47.2	4,047	0.77	13.50	17.26	38	2	40	450			
46	0 + 00.00	20 + 64.1	2,064	0.39	13.89	17.65	38	2	40	625			
47	0 + 00.00	14 + 95.7	1,496	0.28	14.17	17.93	38	2	40	625			
48	0 + 00.00	13 + 45.4	1,345	0.25	14.42	18.19	38	2	40	625			
49	0 + 00.00	14 + 32.90	1,433	0.27	14.70	18.46	38	2	40	625			
50	0 + 00.00	82 + 31	8,231	1.56	16.25	20.02	38	2	40	400			
51	0 + 00.00	58 + 57.4	5,857	1.11	17.36	21.13	38	2	40	400			
52	0 + 00.00	15 + 69.4	1,569	0.30	17.66	21.42	38	2	40	500			
53	0 + 00.00	12 + 92.9	1,293	0.24	17.91	21.67	38	2	40	650	D/A Q1		
54	0 + 00.00	10 + 48.5	1,049	0.20	18.10	21.87	38	2	40	660			
55	0 + 00.00	40 + 11.30	4,011	0.76	18.86	22.63	38	2	40	650			
Terminal	0 + 00.00	65 + 00.00	6,500	1.23	20.10	23.86	32	2	34	575			
Channel	65 + 00.00	186 + 21.2	12,121	2.30	2.30	26.15	34	2	36	575			
*A	0 + 00.00	53 + 21.49	5,321	1.01	1.01	27.16	30	2	32	300	Primary D/A 2 Secondary D/A Q1 & 2A		
*B	0 + 00.00	70 + 48	7,048	1.33	2.34	28.50	30	2	32	300			
*C	0 + 00.00	9 + 71.1	971	0.18	2.53	28.68	30	2	32	300			
*D	0 + 00.00	10 + 4.02	1,004	0.19	2.72	28.87	30	2	32	300			
*E	0 + 00.00	10 + 71.1	1,071	0.20	2.92	29.07	30	2	32	300			
F	0 + 00.00	25 + 48	2,548	0.48	3.40	29.56	30	2	32	300			
G	0 + 00.00	91 + 21.5	9,121	1.73	4.44	31.28	30	2	32	300			

* Not currently maintained

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION.

2.1. Introduction. This section is based on concerns for resources and impacts on resources expressed Section 3.0, *The Affected Environment*, and Section 4.0, *The Environmental Consequences*. The key to this section is the alternative comparison chart, Figure 2.1, page 7. This section has five parts:

a. A description of the process used to formulate alternatives.

b. A description of alternatives that were considered but were eliminated from detailed consideration.

c. A description of each alternative.

d. A comparison of the alternatives.

e. The identification of the preferred alternative.

2.2. History of Alternative Formulation. Over the years, disposal areas have been created along the channel during construction and maintenance activities. Some disposal areas have been developed into other uses such as port facilities, recreational areas, and residential housing. In recent history, several disposal areas have remained for use: Bartram and Buck Islands. In addition, the State of Florida has requested that where feasible and environmentally acceptable that sand compatible with the beach be placed on the beach to help reduce the erosion rate. In 1986, the Jacksonville Harbor Ocean Dredged Material Disposal Site (ODMDS) was designated by the Environmental Protection Agency (USEPA, 1986). This area could be used as a disposal area for the Jacksonville Harbor should no upland disposal areas be available. In 1988, a reconnaissance level study was conducted to determine what other sites might be feasible to use as disposal areas within the Jacksonville Harbor project (USACE, 1988).

2.3. Eliminated Alternatives. The reconnaissance report for the alternate disposal site indicates other sites could be available. However, these sites have not been fully evaluated and are not available at this time as an alternative. The ODMDS cannot be used at this time because other upland areas are available and the EPA would not give its approval for its use.

2.4. Description of Alternatives.

2.4.1. No Action Alternative. No dredging or disposal operations would occur.

2.4.2. Alternative A - Dredging and Beach Disposal. Dredging would be conducted within Jacksonville Harbor and placed on Atlantic Beach and Seminole Beach. In accordance with an agreement with the State of Florida only material suitable for beach placement (less than

10% silt content) would be put here. In order to protect nesting sea turtles disposal operations should only occur between 30 October and 1 May. Should dredging operation occur after 1 March through 30 October, beach monitoring for turtle nesting activities and nest relocation will be initiated and conducted by personnel permitted by the Florida Department of Natural Resources. If beach compaction exceeds 500 cone penetrometer units after disposal operations, then, the beach will be tilled to a 36-inch depth to facilitate unimpeded turtle nesting. The standard manatee conditions would be placed on the dredging and disposal operations to protect this species. This includes contractor awareness, monitoring, auxiliary boat slow speeds, equipment shut-down should manatees be present within 50 feet of the dredging and reporting criteria. If a hopper dredge is to be used it is restricted below Mile 6.0 during the winter (December through 15 April) turtle window established by the National Marine Fisheries Service in its Regional Biological Opinion (BO) for dredging activities along the southeastern United States (NMFS, 1995).

2.4.3. Alternative B - Dredging and Disposal on Bartram Island. Dredging would occur within the Jacksonville Harbor and placed in this disposal area. The standard manatee conditions would be placed on the dredging and disposal operations to protect this species. This includes contractor awareness, monitoring, auxiliary boat slow speeds, equipment shut-down should manatees be present within 50 feet of the dredging and reporting criteria. Most of the material would be dredged from an area above Mile 6.0. If a hopper dredge is to be used it is restricted below Mile 6.0 during the winter (December through 15 April) turtle window established by the National Marine Fisheries Service in its Regional Biological Opinion (BO) for dredging activities along the southeastern United States (NMFS, 1995). If dredging occurs during migratory bird nesting season (1 April through August 31), special conditions will be required in order to protect migratory birds. Specific criteria includes awareness of legal and environmental issues, site monitoring, buffer zones around known nests, access to the nesting sites, nesting seasons, techniques for making construction sites undesirable for nesting, qualifications of the bird monitor, and reporting.

2.4.4. Alternative C - Dredging and Disposal on Buck Island. Dredging would occur within the Jacksonville Harbor and placed in this disposal area. Usually, material that is suitable for construction purposes is placed at this site. The standard manatee conditions would be placed on the dredging and disposal operations to protect this species. This includes contractor awareness, monitoring, auxiliary boat slow speeds, equipment shut-down should manatees be present within 50 feet of the dredging and reporting criteria. If a hopper dredge is to be used it is restricted below Mile 6.0 during the winter (December through 15 April) turtle window established by the National Marine Fisheries Service in its Regional Biological Opinion (BO) for dredging activities along the southeastern United States (NMFS, 1995). If dredging occurs during migratory bird nesting season (1 April through August 31), special conditions will be required in order to protect migratory birds. Specific criteria includes awareness of legal and environmental issues, site monitoring, buffer zones around known nests, access to the nesting sites, nesting seasons, techniques for making construction sites undesirable for nesting, qualifications of the bird monitor, and reporting.

2.4.3. Alternative D - Dredging and Disposal in the Jacksonville Electric Authority Site. Dredging would occur within the Jacksonville Harbor and placed in this disposal area. The standard manatee conditions would be placed on the dredging and disposal operations to protect this species. This includes contractor awareness, monitoring, auxiliary boat slow speeds, equipment shut-down should manatees be present within 50 feet of the dredging and reporting criteria. If a hopper dredge is to be used it is restricted below Mile 6.0 during the winter (December through March) turtle window established by the National Marine Fisheries Service in its Regional Biological Opinion (BO) for dredging activities along the southeastern United States (NMFS, 1995). If dredging occurs during migratory bird nesting season (1 April through August 31), special conditions will be required in order to protect migratory birds. Specific criteria includes awareness of legal and environmental issues, site monitoring, buffer zones around known nests, access to the nesting sites, nesting seasons, techniques for making construction sites undesirable for nesting, qualifications of the bird monitor, and reporting.

2.5. Alternative Comparison.

FIGURE 2.1, ALTERNATIVE COMPARISON

RESOURCE	NO ACTION ALT.	ALT A - DREDGING AND BEACH DISPOSAL	ALT B - DREDGING AND DISPOSAL ON BARTRAM ISLAND	ALT C - DREDGING AND DISPOSAL ON BUCK ISLAND	ALT D - DREDGING AND DISPOSAL IN JEA SITE
Water quality	No impact	Minor short-term increase in turbidity at dredge site and from return water entering the surf zone.	Minor short-term increase in turbidity at dredge site	Minor short-term increase in turbidity at the dredge site	Minor short-term increase in turbidity at the dredge site
Sea turtles	No impact	No impact if sea turtle dredging windows, equipment usage and disposal conditions are adhered to.	No impact if sea turtle dredging windows and equipment usage are adhered to.	No impact if sea turtle dredging window and equipment usage are adhered to	No impact if sea turtle dredging window and equipment usage are adhered to
Manatees	No Impact	No impact if standard conditions are implemented.	No impact if standard conditions are implemented.	No impact if standard conditions are implemented	No impact if standard conditions are implemented
Migratory birds	Minor adverse impact from reduction in nesting habitat.	No impact.	Maintenance of existing nesting habitat. No impact on nesting if conditions for protection are implemented.	Maintenance of existing nesting habitat. No impact on nesting if conditions for protection are implemented.	Maintenance of existing nesting habitat. No impact on nesting if conditions for protection are implemented.

RESOURCE	NO ACTION ALT.	ALT A - DREDGING AND BEACH DISPOSAL	ALT B - DREDGING AND DISPOSAL ON BARTRAM ISLAND	ALT C - DREDGING AND DISPOSAL ON BUCK ISLAND	ALT D - DREDGING AND DISPOSAL IN JEA SITE
Cultural resources	No impact	No impact	No impact	No impact	No impact
Timucuan Ecological and Historic Preserve	Minor benefit of aesthetics of Fort Caroline vista from no use of Buck Island	No impact.	No impact.	No impact	Minor short-term impact on aesthetics of the Fort Caroline Vista.
Aesthetics	Minor benefit of aesthetics of Fort Caroline vista from no use of Buck Island	Minor short-term disruption to aesthetics. Major short-term disruption to aesthetics from beach disposal	No impact.	No impact.	Minor short-term impact on aesthetics of the Fort Caroline Vista.
Recreation	Minor long-term reduction in shoreline of Atlantic Beach and Seminole Beach	Minor long-term benefit by maintaining beach environment. Major short-term interruption of recreation.	No impact.	No impact.	No impact.
Navigation	Major long-term reduction in navigable capacity	Minor short-term disruption to navigation during construction. Major long-term benefit by maintaining channel depths.	Minor short-term disruption to navigation during construction. Major long-term benefit by maintaining channel depths.	Minor short-term disruption to navigation during construction. Major long-term benefit by maintaining channel depths.	Minor short-term disruption to navigation during construction. Major long-term benefit by maintain ing channel depths.
Economics	Major long-term reduction in commerce	Minor short-term stimulus to local economy from sale of goods and services Major long-term regional benefit from maintaining the harbor and beach	Minor short-term stimulus to local economy from sale of goods and services Major long-term regional benefit from maintaining the harbor	Minor short-term stimulus to local economy from sale of goods and services Major long-term regional benefit from maintaining the harbor	Minor short-term stimulus to local economy from sale of goods and services Major long-term regional benefit from maintaining the harbor

2.6. Preferred Alternative. All of the dredging and disposal alternatives are acceptable. The only differentiation between alternatives is the economic feasibility of the disposal location.

3.0. AFFECTED ENVIRONMENT.

3.1. Introduction. The Affected Environment Section succinctly describes the environmental resources, the relevant issues and the area in which the they are located. The environmental issues that are relevant to the decision to be made are the following (these are also going to Section 1.4.:

a. Water quality
b. Sea turtle impacts
c. Manatee impacts
d. Migratory bird nesting impacts
e. Cultural resources
f. Timucuan Ecological and Historic Preserve
g. Aesthetics
h. Recreation
i. Navigation
j. Economics

3.2. Description of the Area.

3.2.1. General. Jacksonville is located along the northeast coast of Florida near the Georgia border (USACE, 1988). The City of Jacksonville, originally named Cowford, was built along the banks of the St. Johns River which flows in a northeasterly direction before it enters the Atlantic Ocean. The Atlantic Intracoastal Waterway intersects the St. Johns River at about river mile 5.0. The area from the mouth of the St. Johns River upstream to mile 26 is the Congressionally authorized project known as Jacksonville Harbor. The Harbor is a deep draft harbor used by ocean going vessels as well as recreational and commercial fishing vessels. Trawling for fish and shrimp occurs in selected part of the Harbor. The Harbor area is tidally influenced by the ocean providing habitat for a wide variety of saltwater species entering into the estuarine and riverine systems. The river flows through industrial, business and residential areas within Duval County, Florida. The Jacksonville Port is located at Cut 42 near Blount Island. The Terminal channel is located upstream near the Jefferson-Smirfett Paper Plant. The JEA site is located off Hecksher Drive adjacent to the power plant. The existing disposal sites are located on Bartram Island, Atlantic Beach, Seminole Beach, JEA site and Buck Island. These sites are located immediately upstream of the Dames Point Bridge, south of the jetty at the mouth of the St Johns River and downstream of Blount Island along the south bank, respectively.

3.2.2. Biological.

a. St. Johns River. The St. Johns River has aquatic vegetative communities which range from intertidal and submerged algae habitats to emergent salt and tidal marshes. The estuaries provide important nursery areas for juvenile shrimp before they move offshore and are harvested by commercial shrimp fishing industry (Joyce, 1965). Blue crab and oysters

are also important. Recreational sport fishing also occurs along the shoreline of the St. Johns River. Manatees use the St. Johns River in the warmer summer months before migrating south. However, a few remain near the warm-water discharges of the power plants in the cold weather months.

b. Bartram Island (also known as Quarantine Island). This site lies between the St. Johns Rivr channel and Mill Cove. This site has been previously used as a disposal site for dredged material. Remnant dikes and outfall weir structures are still visible. The disposal area is divided into three areas; the shoreline outside the diked area, the interior disposal area, and the secondary settling area containing the weir outfall. The primary settling area contains pioneer species of plants such as wax myrtle, southern red cedar, black cherry, cabbage palmetto, and muscadine grape (USFWS, 1988). The exterior of the dike along the shoreline is uplands having relatively mature slash pine, cabbage palm and live oaks. These areas support rabbit and raccoon. The secondary settling basin contains marsh and open water areas, and supports a wide variety of fish and wildlife, especially wading and shorebirds. Large numbers of birds can be seen along the edge of the marsh habitat foraging for food.

c. Buck Island. Buck Island is located adjacent to Ft. Caroline National Memorial Park (USFWS, 1988). This area is also within the boundaries of the Timucuan Ecological and Historical Preserve. The disposal area property is owned by the Department of Natural Resources and is leased to the Jacksonville Port Authority. It has been used as a disposal area for a number of years. Most of the material placed in the area has been sandy based and is generally void of vegetative cover. It has high dikes that overlook the St. Johns River. Buck Island is connected to the shoreline by a small wooden bridge which allows entrance to the site by motor vehicles, people and small mammals. The entire site has been fenced to minimize unauthorized entry. However, entry is not totally controlled because access can be gained from the St. Johns river side of the island. Fishermen and people seeking shoreline recreation access the site. People searching for sharks teeth commonly walk around the disposal site. Feral dogs, red fox, rabbit and raccoon also visit the island. The island is also known as a migratory birds nesting site (Bremer, 1991). In 1990, least terns were observed nesting within one of the cells of the disposal area that had suitable habitat. Due to the presence of foxes and raccoons nesting, no nesting success was observed. A mitigation site, approximately 7.1 acres of saltmarsh, was constructed to offset for impacts on wetlands on Blount Island and is located along the east side of the site. The perimeter of this island is also sparsely vegetated with live oak, cabbage palm and southern red cedar.

d. The Beach Disposal Area. The State of Florida is a portion of the Floridian Plateau, the plateau being exposed as dry land during periods of drop in sea level. Each retreat of the sea left behind a wide variety of hard mineral deposits, which have been moved about subsequently by waves and currents. The movement of these deposits has formed present day sandy beaches, offshore bars, and barrier islands. Shore processes over geologic time have enlarged and extended many of these barrier islands. These barrier

islands are generally vegetated with salt tolerant grasses, herbs, and shrubs. Pioneer species such as sea oats (*Uniola paniculata*) dominate the foredune and the saw palmetto (*Serenoa repens*) the leeward slope of the Atlantic coastal dunes in this area. Waves are continually adding new sections to barrier islands while eroding the old, through dynamic processes such as longshore drift, winter storms, and hurricanes. Where summer accretion does not keep up with winter storm recession, an erosion problem such as the one that Duval County is currently experiencing prevails. In 1989, Atlantic Beach was used as a disposal area. In conjunction with that dredging occurrence, sea oats were planted along the dune area and sand fencing was placed in front of the dune to help stabilize the dune from wind erosion. In 1991, sand was also placed along the length of Atlantic and Seminole Beaches and again stabilized using sea oats and sand fencing. The beach in front of the Mayport Naval Station is severely eroding due to the lack of adequate stabilization. In both the 1970's and the 1990's, the numerically dominant invertebrate found along the shoreline of Duval County is the Atlantic coquina clam, *Donax variabilis*, and the amphipod, *Acanthohaustorius pansus*. Highly visible decapod crustaceans of the Duval County supralittoral zone include the ghost crab (*Ocypode quadrata*), mole crab (*Emerita talpoida*), and Atlantic fiddler crab (*Uca pugilator*). These organisms are highly motile and burrow into the moist sand for refuge and also to retard water evaporation from their bodies during aerial exposure (Barnes 1974).

e. Jacksonville Electric Authority (JEA) Site. The site is owned by JEA and has been used for fly ash disposal from the power plant. The site has also been used for dredged material disposal. The upland portions of the DA contained within the dikes area vegetated with wax myrtle and other shrubs. An open water area is located at the lower end of the DA near the outfall weir structures. These open water areas are habitat for shorebirds and waterfowl. These birds not only use the interior for foraging for food but also as nesting habitat. No significant resources are located at this site (USACE, 1988).

3.2.3. Threatened and Endangered Species. The following species listed as threatened or endangered by U.S. Fish & Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) pursuant to the Endangered Species Act (USFWS, 1987) could be located in the project area:

green sea turtle . . . . . *Chelonia mydas*
hawksbill sea turtle . . . . . *Eretmochelys imbricata*
Kemp's Ridley sea turtle . . . . . *Lepidochelys kempii*
leatherback sea turtle . . . . . *Dermochelys doriacea*
loggerhead sea turtle . . . . . *Caretta caretta*
West Indian manatee . . . . . *Trichechus manatus*
Piping plover . . . . . *Charadrius melodius*

3.2.4. Cultural, Historical, and Archeological Resources. An archival and literature review, including a review of the current National Register of Historic Places listing and consultation with the Florida State Historic Preservation Officer (SHPO), was conducted to